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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/534,942

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Adolf Gustav Zajber

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FRIEDRICH KUEFFNER
317 MADISON AVENUE, SUITE 910
NEW YORK, NY 10017

EXAMINER

LIN, KUANG Y

ART UNIT

PAPER NUMBER

1793

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/534,942	Applicant(s) ZAJBER ET AL.	
	Examiner Kuang Y. Lin	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 August 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 4-8 is/are pending in the application.
- 4a) Of the above claim(s) 9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 4-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 1793

1. Applicant is advised that since there are several extensive amendments submitted by applicant during the course of prosecution, applicant in response to this office action is requested to submit a substitute specification, incorporating all prior amendments to the specification, such that to render the specification in a better format for reading.

2. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 1, 4-8, drawn to a continuous casting mold.

Group II, claim(s) 9, drawn to a method of making a continuous casting mold.

3. The inventions listed as Groups I and II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: For those groups of claims that SHARE a special technical feature, the special technical feature does NOT define a contribution over the prior art, i.e. the special technical feature is anticipated by or obvious in view of the prior art. In the instant application, the special technical feature of "tubular mold made of copper or of copper alloys whose entry cross-section on a pouring-in side has a cross-section which is enlarged compared to an exit cross-section on a casting exit side, wherein on the pouring-in side the conicity of a second conical section is greater than that of first conical section" is either anticipated by or obvious in view of US 6,340,048 to Tsune et al. or US 4,207,941 to Shrum.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claim 9 is withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Art Unit: 1793

4. The specification is objected to under 35 USC 112, 1st paragraph in that the disclosure is written in a non-idiomatic expression such that renders the meaning vague and indefinite. For example, in page 2, line 16+ and page 7, line 1+, respectively, (amended), in what manner “the geometrical **shape of inner cross-section** and the corresponding **dimensions** are set **conform** to the locally deducible quantity of solidification heat”? It seems to be that the shape of inner cross-section and the corresponding dimensions are set to be a function of the locally deducible quantity of solidification heat, rather than conform thereto. In page 5, line 11+, and page 8, line 21+, respectively, (amended), it cites “parallel to the plane”. It is not clear what “plane” is referred.

5. Claims 1 and 4-8 are rejected under 35 USC 112, 1st paragraph for the same reasons as set forth in the objected to the specification supra.

6. Claims 1, and 4-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

These claim are written in a narrative format rather than an objective format and thereby they do not positively and directly include all the structural elements which are referred thereto, i.e. the shape or configuration of the mold is described in turn of the heat removing condition during casting process which is extraneous to the structure of the casting mold. Further, in claim 1, what is “preliminary section castings”? last 10 lines of claim 1, what the relationship among the conicity, wall volume, exterior surface, notch and wall thickness.

Art Unit: 1793

Those lines are written in such an unclear manner that it render the meaning vague and indefinite. In claim 8, it is written in a non-idiomatic manner such that it is not clear what mold structure is claimed.

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 1 and 8 **insofar as definite** are rejected under 35 U.S.C. 103(a) as being unpatentable over either US 6,340,048 to Tsune et al., or US 4,207,941 to Shrum and further in view of US 5,467,809 to Arvedi et al.

Each of the primary references substantially shows the invention as claimed except that they do not show to reduce the mold wall volume by means of notches. However, Arvedi et al. show to provide notches on the exterior of the mold wall such that to provide more coolant contacting surface and thereby to

Art Unit: 1793

speed up the heat removal process. It would have been obvious to provide the notches of Arvedi et al. in the mold wall of the primary references in view of the advantage. Applicant is advised that the language of “locally deducible quantity of the solidification heat for the continuous casting”, “progress of the temperature diagram across the mold height”, “the dissipated heat quantity per time unit”, etc. do not further provide any structural limitation for the continuous casting mold as claimed.

10. Claims 4-7 **insofar as definite** are rejected under 35 U.S.C. 103(a) as being unpatentable over either US 6,340,048 to Tsune et al., or US 4,207,941 to Shrum in view of US 5,467,809 to Arvedi et al. as applied to claim 1 above, and further in view of US 5,343,931 to Striuli et al. or JP 6-31,401.

Striuli et al. show a continuous casting mold containing a substantially central, approximately parabola-shaped recess for reducing of the concentration of tensions in the strand skin and lessening of tendency to tearing of strand skin during strand withdrawal process. JP '401 shows to provide an outward bulging at each side of mold plate to prevent the damage of the solidified shell. It would have been obvious to further provide the continuous casting mold of the primary references with the central, approximately parabola-shaped recess of the secondary references in view of the advantage.

11. Applicant's arguments filed August 15, 2008 have been fully considered but they are not persuasive.

Art Unit: 1793

Applicant in page 14, 2nd para. of the response stated that the prior art references do not show the claimed continuous casting mold which has an inner geometrical cross-section form and being configured to have dimensions that are analogous to a locally deducible quantity of a solidification heat for the continuous casting according to a temperature progression diagram along the mold height.

However, the limitation is related to a process parameter which is extraneous to the casting mold. Thus, applicant's argument is moot.

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kuang Y. Lin whose telephone number is 571-272-1179. The examiner can normally be reached on Monday-Friday, 10:00-6:30,.

Art Unit: 1793

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jessica L. Ward can be reached on 571-272-1223. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kuang Y. Lin/
Primary Examiner, Art Unit 1793

9-25-08